## REMARKS

Claims 1 to 20 are currently pending in the present application. Claim 20 has been added. No new matter is added.

The Office Action objects to the drawings as failing to include suitable descriptive labels. Figure 5 has been corrected to provide a descriptive label in box 60 and 68 for the x-ray source and x-ray detector, respectively.

The Office Action objects to the specification asserting that it is missing required headings. Applicants respectfully assert that MPEP §608.01(a) does not require the use of headings. As such, Applicants request that this objection be removed.

Claims 1-5, 7, 8, 10-19 have been rejected by the Office Action under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 6,653,636 B2 to Busse, et al. in view of U.S. Patent 6,417,504 B1 to Kozlowski. The Office Action states that Busse does not disclose a voltage amplifier with a gain greater that one but asserts that it would have been obvious to modify the Busse circuit with components from the Kozlowski circuit so that the amplifier would have a gain greater than one.

As described by the Applicant in the present specification, the Busse device (as shown in the corresponding WO 01/57554 application) discloses a pixel configuration in which the voltage across the pixel photodiode is provided to a source follower circuit arrangement which acts as a unitary gain voltage buffer. The output voltage charges a sampling capacitor, and the gain is dependent on the ratio of the capacitance of the sampling capacitor to the pixel capacitance. The Applicants in Busse described the charge amplification as follows:

> The proposed solution has a particularly advantageous aspect which is formed by the stability of the transfer function of the circuit. This gain stability of the circuit is due to the fact that the

> source follower transistor 21 has a stable voltage amplification amounting to 1 which is converted into a charge amplification $G_Q = C_S/C_P$ by means of the sampling capacitor 26. The offset stability is obtained by subtraction of the relevant offset value from the overall value consisting of the signal and the offset value. As a result, all offset effects which are slower in time than the image repetition time $T_F$ are effectively eliminated. Due to the 1/F noise of the source follower transistors 21 and the active loads 23 used in the proposed circuit, additional noise may occur in this mode of operation. However, noise phenomena which are essentially slower than the image repetition rate $T_F$ are again eliminated by the CDS method. (Busse col. 9, lines 8-23)(emphasis added).

The objective of using the charge capacitance with the stable voltage amplification of one is reiterated by the Busse Applicants in their summary of the invention:

> This object is achieved by means of a sensor which is characterized in that the means for amplifying include a respective source follower transistor whose gate is connected to the conversion element, whose source is connected an active load and to one side of a sampling capacitor, the other side of the sampling capacitor being connected to the read-out line via the read-out switching element, and that a respective reset element is connected to the conversion element in order to reset the conversion element to an initial state.
>
> The active load ideally constitutes a current source which impresses a constant channel current on the source follower transistor. The threshold voltage of the source follower transistor is thus stabilized; this threshold voltage is strongly dependent on the channel current, notably in the case of TFTs of amorphous silicon. As a result of the stable threshold voltage, the condition for correct operation of the source follower transistor with adequate stability of the transfer function is satisfied. Therefore, the source follower transistor has a stable voltage amplification of 1. It is converted into a charge amplification $G_Q = C_S/C_P$ by the sampling capacitor, wherein $C_P$ is the capacitance on the conversion element and $C_S$ is the capacitance of the sampling capacitor. The capacitance on the conversion element may again be an intrinsic storage capacitance of the conversion element or an additional capacitance. (Busse col. 2, lines 38-64)(emphasis added).

As such, Busse does not disclose or suggest the use of a voltage amplifier (16) having gain greater than 1, and there is no motivation to modify Busse with this feature of claims 1-20.

Claims 6 and 9 have been rejected by the Office Action under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,653,636 B2 to Busse et al. and U.S. Patent 6,417,504 B1 to Kozlowski in view of US 2005/0285960 A1 to Purcell. As described above, Busse does not disclose or suggest the feature of a voltage amplifier (16) having gain greater than 1, and the additional reference of Purcell does not render these claims unpatentable.

In view of the foregoing, Applicants respectfully submit that the specification, the drawings and all claims presented in this application are currently in condition for allowance. Accordingly, Applicants respectfully request favorable consideration and that this application be passed to allowance.

Should any changes to the claims and/or specification be deemed necessary to place the application in condition for allowance, the Examiner is respectfully requested to contact the undersigned to discuss the same.

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Respectfully submitted,

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